NICK BROOKES DEMOLITION AND WASTE DISPOSAL

SECONDARY AGGREGATE PRODUCTION PROTOCOL

Version 2.0 - 12 September 2008

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INTRODUCTION

1. Recent ECJ (European Court of Justice) rulings have resulted in the establishment within the UK of a decision that the products obtained from processing many recyclable waste streams are still waste until they are finally used. This decision creates uncertainty for the users of such products and pushes their decision making towards virgin materials away from the waste hierarchy, in particular the re-use of construction waste is one of the most affected activities at present.

2. The purpose of this document is to confirm that Nick Brookes Demolition & Waste Disposal support "the quality protocol" produced by WRAP (Waste and Resources Action Programme) and to document which waste streams are best utilised for the production of secondary or recovered aggregates and the quality controls involved in the creation of such materials. Once materials have met the requirements of this protocol they are no longer considered to be waste. The need for this document may also be negated by the outcome of the recent case between OSS Group Ltd and the Environment Agency.

3. For customers using our recycled products there will be little or no observable difference from virgin materials in their normal construction use. However, there are significant advantages in confirming beyond reasonable doubt that recovered aggregates are not waste, namely:

    i. The term 'waste' has a blight effect even where customers are fully aware of the source and are satisfied as to the composition and analysis.

    ii. Use of waste in construction requires the registration of a Paragraph 19A exemption which costs £565.00 to register and is subject to a 35 day notification period. Customers place orders at short notice and the Wardle transfer station has stock available to meet this requirement. If a customer has to wait 35 days for the Environment Agency ("EA") to make a decision then they will find an alternative source, often virgin materials which is contrary to all current recycling policies and results in the production of more greenhouse gases. Furthermore the £565.00 fee applies to exemptions of any size. Faced with such a cost most users would opt for less costly but virgin materials, despite the increased environmental impact.

4. The Waste Framework Directive definition of waste is well documented and discussed elsewhere. The status of the construction wastes as received at the transfer station is not in dispute but the point at which they cease to be waste when processed requires confirmation. The EA considers that once a substance or object has become waste, it will remain waste until it has been fully recovered and it no longer poses a potential threat to

the environment or human health, however, the crucial test of self interest is not considered in recent case law. This may change in light of the OSS case referred to above but until such confirmation is received this document shall be used to demonstrate compliance with the aggregate protocol.

5. One of the main considerations in determining a substance as waste has been that the producer of the waste does not have the self interest to deal with the waste satisfactorily. In the case of recovered aggregates the self interest is met by virtue of the fact that the customer will reject materials which are substandard and reduce the likelihood of using the same supplier. The products have to be fit for purpose and meet the customers' requirements, many of whom are engaged in civil engineering works and are qualified to make the decision as to whether or not the material is fit for purpose and to specify any pre-acceptance testing or analysis for the end use.

6. If a recovered aggregate meets a specification which is fit for an intended use and does not pose a threat to the environment i.e. it has a beneficial use then it should be considered to be a product if the following procedures are followed.

7. Recycled aggregates resulting from the processing of inorganic material previously used in construction can be processed to a plethora of specifications which easily demonstrate their equivalence to natural materials. The main specifications currently prepared by Nick Brookes Demolition & Waste Disposal using the new aggregate washing plant are:

   i. WSA Wash grit sand 3 mm down
   ii. WSA Wash grit sand 5 mm down
   iii. WSA 4 mm - 10 mm pipe bedding
   iv. WSA 10 mm - 20mm pipe bedding
   v. WSA 20 mm - 40 washed filter media
   vi. WSA 20 mm - 40 mm concreting gravel
   vii. Puddle clay
   viii. MOT Type 1 sub-base
   ix. Other bespoke products prepared to customer's requirements and known specifications.

8. The production of a saleable product does not in itself ensure recovery and remove the designation as waste. However, it is stated that there must also be a need and a market for the recovered waste and that it will not be merely stockpiled pending development of such a need or market. The market for recovered aggregates of the specifications stated above is well established and the materials meets a recognised need. This is also supported by the literature produced by Nick Brookes to advise customers of the products and specifications available.

ACCEPTANCE CRITERIA AND THE PROCESS

9. Nick Brookes Demolition & Waste Disposal operates a waste transfer station at Green Lane, Wardle which is licensed by the Environment Agency. A waste management licence (an Environmental Permit from April 2008) is required for the pre-sorting of the construction waste prior to crushing (which is a process regulated and permitted by Crewe and Nantwich Borough Council) or processing in the aggregate washing plant, unless a valid exemption is in force.

10. The Wardle site has a broad licence and can accept household, commercial and industrial wastes for treatment and storage. The inert wastes suitable for aggregate production are separated from non-hazardous wastes after receipt and processed in the washing plant, crusher and screens to produce the range of products referred to above. In addition to the Environmental Permit the site has several exemption registrations which are attached to this document as Appendix B.

11. The inert waste feedstock for aggregate production consists of construction and demolition industry wastes in the form of bricks, tiles, concrete, soil, stone etc. which are separated from the incoming waste stream after receipt and stored in a separate stockpile prior to crushing or washing to reduce the risk of cross contamination by litter etc.

12. Inert waste arrives at the site either in whole loads or within skips containing mixed construction and demolition waste.

13. The weight of the load is recorded and the duty of care documentation checked to ensure that the waste has been properly described and can be accepted at the site. The load is then unsheeted and a visual inspection carried out prior to the contents of the load being discharged adjacent to the pre-crushing stockpile and visually inspected for a second time. If inspection reveals unwanted materials then the load will be moved to the mixed waste stockpile. These procedures are detailed further in the site working plan and waste management licence/environmental permit for the site.

14. Mixed loads will inspected in the manner described above and is they meet the requirements of the licence they will be accepted. If they do not conform they will be rejected and returned to the waste producer in line with the agreed procedures in the site working plan and waste management licence. The loads will then be tipped onto the mixed waste stockpile for sorting in the trommel in the transfer building to enable the aggregate fraction to be transferred to the pre-crushing or washing stockpile.

15. A summary of the production process is shown on a flowchart in Appendix A. The Method Statement of Production (MSP) consists of Section 9 to 27 of this document and the Appendix A flowchart.

THE QUALITY PROTOCOL

16. The following details are known for all incoming loads:

    a) date
    b) description
    c) source/producer
    d) quantity by weight or volume
    e) carrier

17. The working plan for the site describes how the site will meet the requirements of the waste management licence and how wastes is inspected and segregated.

18. Research of other recycled aggregate producers has revealed a wide variability in testing regimes and product specification. It would appear that the use of materials is widespread and is not sold as waste. However, many such materials cannot demonstrate compliance with the WRAP Producers' Compliance Checklist or the Purchasers'/Specifiers' Compliance Checklists.

19. The inspection and testing regime including frequency and methods of test for finished product shall be detailed and appropriate to the material end use, the quality of incoming waste and the complexity of the waste recovery process. As a minimum the stockpiles will be sampled in accordance with the sampling regime specified in Annex A or in accordance with customers' requirements.

20. The testing rates may be varied to ensure a controlled process.

21. Records of incoming wastes and products will be kept at the site office.

22. Results of tests are required to meet the customer's specification and will be forwarded upon request.

23. If further tests are required for assessment of suitability for a particular end use, then the results shall also be retained.

24. Delivery documentation shall state that the product was produced under a quality protocol conforming to this document.

25. We undertake to provide the following when requested by the customer;

    a) test results
    b) test procedures
    c) outline details of the production method
    d) provide samples for independent testing

26. Waste used for processing will fall within the following waste codes:

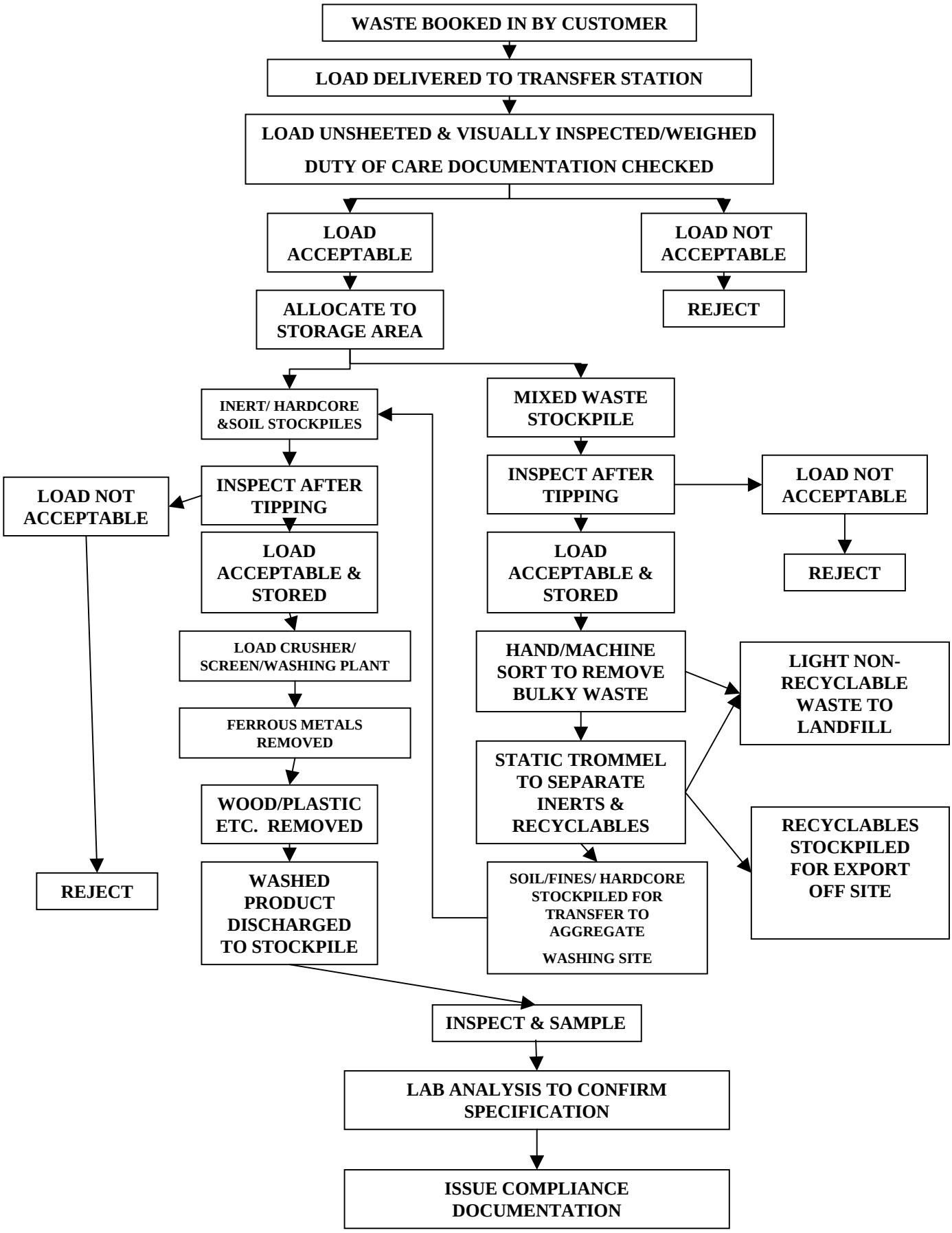
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics
17 05 04	Soils and stones including gravel,
17 05 08	Crushed rock, sand,
20 02 02	Soils and stones

27. Samples for analysis will be aggregated samples from each stockpile. 4 - 8 sub-samples will be taken to make one 2 kg sample, which will provide sufficient additional material for further analysis at the customer's request.

Nick Brookes
Nick Brookes Demolition and Waste Disposal

12 September 2008

APPENDIX A
PROCESS FLOWCHART


WASTE BOOKED IN BY CUSTOMER
LOAD DELIVERED TO TRANSFER STATION
LOAD UNSHEETED & VISUALLY INSPECTED/WEIGHED
DUTY OF CARE DOCUMENTATION CHECKED
LOAD ACCEPTABLE
LOAD NOT ACCEPTABLE
ALLOCATE TO STORAGE AREA
REJECT
INERT/ HARDCORE &SOIL STOCKPILES
MIXED WASTE STOCKPILE
LOAD NOT ACCEPTABLE
INSPECT AFTER TIPPING
INSPECT AFTER TIPPING
LOAD NOT ACCEPTABLE
REJECT
LOAD ACCEPTABLE & STORED
LOAD ACCEPTABLE & STORED
LOAD CRUSHER/ SCREEN/WASHING PLANT
HAND/MACHINE SORT TO REMOVE BULKY WASTE
LIGHT NON-RECYCLABLE WASTE TO LANDFILL
FERROUS METALS REMOVED
STATIC TROMMEL TO SEPARATE INERTS & RECYCLABLES
WOOD/PLASTIC ETC. REMOVED
RECYCLABLES STOCKPILED FOR EXPORT OFF SITE
REJECT
WASHED PRODUCT DISCHARGED TO STOCKPILE
SOIL/FINES/ HARDCORE STOCKPILED FOR TRANSFER TO AGGREGATE WASHING SITE
INSPECT & SAMPLE
LAB ANALYSIS TO CONFIRM SPECIFICATION
ISSUE COMPLIANCE DOCUMENTATION

APPENDIX B MATERIALS TESTING

Table 1: Minimum test frequencies for Nick Brookes aggregates

	Product	Property	Test Method	Minimum test Frequency
i.	WSA Wash grit sand 3 mm down	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly
ii.	WSA Wash grit sand 5 mm down	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly
iii.	WSA 4 mm - 10 mm pipe bedding	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly
iv.	WSA 10 mm - 20mm pipe bedding	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly
v.	WSA 20 mm - 40 washed filter media	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly
vi.	WSA 20 mm - 40 mm concreting gravel	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly
vii.	Puddle clay	Constant Head Permeability	BS 1377	Monthly
viii.	MOT Type 1 sub-base	Grading	BS EN 933-1	Monthly
		Particle Shape	BS EN 933-3 and EN 933-4	Quarterly
		Particle Density	BS EN 1097-6	Quarterly
		Composition	BS EN 933-11	Quarterly

Note: test frequencies are based on the operational hours and output of the washing plant, which can both increase or decrease, resulting in a change in the testing frequency but no change in compliance with the aggregate protocol.

Material change for a better environment

Quality Protocol for the production of aggregates from inert waste

Producers' compliance checklist

This is a self-assessment checklist for producers of aggregates wishing to test and demonstrate the compliance of their process to the WRAP Quality Protocol for production of aggregates from inert waste.

Please consider your process and activities and tick "Yes" or "No" as applicable for each question. Refer to the accompanying Guidance Notes for further details as required.

Your process is fully compliant with the Quality Protocol for production of aggregates from inert waste only if you respond "Yes" to all questions.

Measures to correct areas of non-compliance (where ticks have been scored in the "No" column) must be identified and implemented to achieve compliance with the Quality Protocol. Recycled aggregates that are produced by a process not fully compliant with the Quality Protocol are likely to be a waste and subject to Environmental Permitting Regulations (England & Wales) or Waste Management Licensing Regulations (Scotland & Northern Ireland).

Checklist and Summary Guidance[i]	YES	NO
Waste management requirements (QP ref* 3.4.1, 3.4.4, 3.6.1 and 3.7.1)		
Does your recycling operation have the required environmental permit/waste management licensing/exemptions and is the Duty of Care applied? *NOTE: You must demonstrate that you meet the statutory and regulatory requirements, including use of registered waste carriers and Waste Transfer Notes (WTNs). Please consult the Guidance Notes for further details.*	X	
Acceptance of incoming waste (QP ref 3.4.1 to 3.4.4 and App C)		
Do you have site/location specific Acceptance Criteria procedures for the incoming waste?	X	
Do your Acceptance Criteria include a description of the types of waste accepted and a description of the method of acceptance? *NOTE: List Of Waste Regulations/ European Waste Code for consistency with the WTNs must be used. You must demonstrate that only inert waste is accepted for production of aggregates to the Quality Protocol. Inspection at receipt and at tipping must be carried out.*	X	
Are material input records kept? *NOTE: A record of each load received and accepted must be kept.*	X	
Do you have a procedure for non-compliant waste? *NOTE: You must demonstrate how you are dealing with non-conforming incoming waste. Please consult the Guidance Notes for further details.*	X	
Production and Standards/Specifications requirements (QP ref 3.1 to 3.3 and 3.5)		
Have you set up a Factory Production Control (FPC) system, which includes a Method Statement of Production (MSP), describing the waste recovery process and the range of products? *NOTE: FPC is mandatory for production of aggregates to BS EN Standards and common industry specifications and it is a requirement of the Quality Protocol. The MSP may be represented by a flow chart. All materials produced must be listed. Implementation of the FPC must be demonstrated using the detailed list of requirements within the guidance notes.*	X	
Do you produce to established specifications and/or standards? *NOTE: Aggregates must be produced to be fully compliant to established specifications and/or standards.*	X	

Checklist and Summary Guidance[i]	YES	NO
Testing (QP ref 3.6, 3.6.1 and 3.6.2)		
Have you defined what testing to undertake, and how often, for each material you produce? *NOTE: Any material produced to a FPC must have a defined testing procedure and sampling and testing frequency. Please refer to the Guidance Notes for examples of minimum testing frequencies.*	X	
Does your testing regime comply with the requirements of the standards and specifications for the aggregates you are producing? *NOTE: Aggregates produced to standards and specifications must be tested to demonstrate compliance to those standards and specifications.*	X	
Do you have a procedure for dealing with non-conforming products? *NOTE: You must demonstrate that non-compliant products are dealt with in accordance to the FPC.*	X	
Documentation (QP ref 3.7.2, 3.7.3, 3.8 and 3.9)		
Do you keep a record of all the appropriate documents, in accordance with the FPC, and specifically of the results of the tests undertaken as required by the standards and specifications? *NOTE: A list of records that must be kept in accordance to the FPC is provided within the Guidance Notes.*	X	
Does the delivery ticket of your product contain the description of the material in accordance with the industry or client specification and does it include a statement that the aggregate was produced to a quality scheme meeting the Quality Protocol? *NOTE: Details on the delivery ticket must be provided in accordance with the FPC. The statement that the aggregate was produced to a quality management scheme conforming to the Quality Protocol can only be inserted if no "No" cells have been ticked in this self-assessment form.*	X	

The competant authority for Environmental Permitting (England and Wales) Regulations is the Environment Agency, for Waste Licensing Regulations in Scotland is the Scottish Environment Protection Agency and in Northern Ireland is the Department of the Environment (Environment and Heritage Service). These agencies are able to confirm or provide information on permits, licences and exemptions to third parties if required. They are also able to require documentary proof of the compliance to the Quality Protocol from recycled aggregate producers who claim to be operating to the Quality Protocol.

* QP refs. are for numbered sections in the three versions of the WRAP Quality Protocol for the production of aggregates from inert waste covering England & Wales, Scotland, and Northern Ireland.

Copies are available from http://www.aggregain.org.uk/quality/quality_protocols/index.html

For additional information on Quality Management Systems go to: http://www.aggregain.org.uk/quality/index.html

[i] Expanded guidance notes are available in a separate document called: Guidance Notes to the Producers' compliance checklist for the Quality Protocol for the production of aggregates from inert waste

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recycle

Material change for a better environment

Quality Protocol for the production of aggregates from inert waste

Purchasers'/Specifiers' compliance checklist

This is an assessment checklist for purchasers and specifiers of recycled aggregates wishing to test their suppliers (the producers) for compliance to the WRAP Quality Protocol for production of aggregates from inert waste.

Please consider the process and activities of each of your suppliers and tick "Yes" or "No" as applicable for each question, by referring to the accompanying Guidance Notes for further details.

Suppliers are fully compliant with the Quality Protocol for production of aggregates from inert waste only if you can respond "Yes" to all questions.

Ticks scored in the "No" column highlight areas of non-compliance which your supplier(s) should target for achieving compliance. Recycled aggregates that are produced by a process not fully compliant with the Quality Protocol are likely to be waste and be subject to Environmental Permitting Regulations (England & Wales) or Waste Management Licensing Regulations (Scotland & Northern Ireland).

Checklist and Summary Guidance[i]	YES	NO
Waste management requirements (QP* ref 3.4.1, 3.4.4, 3.6.1 and 3.7.1)		
Does the recycling facility have the required environmental permit/waste management licensing / exemptions and is the Duty of Care applied? *NOTE: The producers must be able to demonstrate that they are fully compliant with statutory and regulatory requirements, including use of registered waste carriers and waste transfer notes (WTNs). Please consult the Guidance Notes for further details.*	X	
Acceptance of incoming waste (QP ref 3.4.1 to 3.4.4 and App C)		
Does the site/location have specific Acceptance Criteria procedures for the incoming waste?	X	
Do the Acceptance Criteria include a description of the types of waste accepted and a description of the method of acceptance? *NOTE: List of Waste regulations/ European Waste Code for consistency with the WTNs must be used. Only inert waste can be accepted for production of aggregates to the Quality Protocol. Inspection at receipt and at tipping must be carried out.*	X	
Are material input records kept? *NOTE: A record of each load received and accepted must be kept.*	X	
Does the site have established procedures for dealing with non-compliant incoming waste? *NOTE: The producer must demonstrate how they deal with non-conforming incoming waste. Please consult the Guidance Notes for further details.*	X	
Production and Standards/Specifications requirements (QP ref 3.1 to 3.3 and 3.5)		
Does the site have a Factory Production Control (FPC) system, which includes a Method Statement of Production (MSP), describing the waste recovery process and the range of products? *NOTE: FPC is mandatory for production of aggregates to BS EN Standards and common industry specifications and it is a requirement of the Quality Protocol. The MSP can be represented by a flow chart. All materials produced must be listed. Implementation of the FPC must be demonstrated using the detailed list of requirements within the guidance notes.*	X	
Does the site produce aggregates to established specifications and/or standards? *NOTE: Aggregates must be produced to be fully compliant to established specifications and/or standards.*	X	

Checklist and Summary Guidance[i]	YES	NO
Inspection and Testing (QP ref 3.6, 3.6.1 and 3.6.2)		
Has the site defined what testing to undertake, and how often, for each material produced? *NOTE: A formalised testing plan, defining sampling, test methods and testing frequencies must be provided and the test results must be available for demonstrating compliance. This is a requirement of the FPC.*	X	
Does the site testing regime comply with the requirements of the Quality Protocol and conform to the standards or specifications for the product? *NOTE: Aggregates produced to agreed standards and specifications must be tested to show compliance to the required standards and specifications.*	X	
Does the facility have a procedure for dealing with non-conforming products? *NOTE: The producer must demonstrate that a procedure for non-compliant products is in place in accordance with the FPC.*	X	
Documentation (QP ref 3.7.2, 3.7.3, 3.8 and 3.9)		
Can the producers demonstrate that records are kept of all the appropriate documents required by the FPC? Are aggregate test records required by the standards and specifications available? *NOTE: A list of records that must be kept in accordance with the FPC is provided within the Guidance Notes. Historic records and/or summaries of past testing results must be available. Examples of records include testing frequencies, grading results, Los Angeles test results etc.*	X	
Does the delivery ticket of the product contain the description of the material in accordance with the industry or client specification and does it include a statement that the aggregate was produced to a quality scheme meeting the Quality Protocol? *NOTE: Details on the delivery ticket must be provided in accordance with the FPC. The statement that the aggregate was produced to a quality management scheme conforming to the Quality Protocol can only be inserted if no "No" cells have been ticked in this assessment form.*	X	

The competant authority for Environmental Permitting (England and Wales) Regulations is the Environment Agency, for Waste Licensing Regulations in Scotland is the Scottish Environment Protection Agency and in Northern Ireland is the Department of the Environment (Environment and Heritage Service). These agencies are able to confirm or provide information on permits, licences and exemptions to third parties if required. They are also able to require documentary proof of the compliance to the Quality Protocol from recycled aggregate producers who claim to be operating to the Quality Protocol.

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